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FOOD FISH--CANNED PRODUCTS

SITUATION AND OUTLOOK

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FOOD FISH—CANNED PRODUCTS SITUATION AND OUTLOOK

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SUMMARY

SALMON

Total supplies of canned salmon during the first 6 months of 1971 were 2.7 million standard cases, 18 percent higher than the same period in 1970. The higher level was caused primarily by higher inventories at the start of 1971, carried over from the 1970 pack.

Anticipations of a smaller 1971 pack caused stocks to move at a slower percentage rate than in 1970. Inventories of red salmon have been large while pink salmon inventories have been a good deal less than in 1970—the reverse of the situation in the first half of 1970.

Wholesale prices of red, chum, silver, and king salmon remained quite firm during January-June, while prices of pinks, with shorter stocks, rose somewhat. Consumption has been slightly higher than last year, despite firm and rising prices.

The pack of salmon, thus far in 1971, has been about 48 percent below 1970. Reds ran extremely late, and pinks in Southeastern Alaska did not appear in any substantial quantity until early August.

In the second half of the year, supplies of salmon will most likely be considerably shorter than in 1970. Likely increases in prices for both red and pink salmon are expected to cause lower consumption. Because of the smaller pack, a larger percentage of 1/2- and 1/4-pound cans will probably be marketed.

SARDINES

Supplies of sardines have been only slightly below 1970 levels. Low inventories carried into 1971 were almost offset by slightly higher imports and a higher domestic pack in the first half of 1971. Sources of sardine imports changed—marked by sharp increases from Japan and continued declines from the Republic of South Africa.

Increases in herring landings for human consumption in most exporting countries indicate that U.S. sardine imports will be higher in the next 6 months. Prices of domestic sardines probably will continue to rise. If the pack in the last half of 1971 is close to that of last year, consumption during July-December 1971 may be about even with 1970.

TUNA

Landings of tuna for the first half of 1971 were slightly higher than for the comparable period in 1970 with a considerably larger percentage of skipjack being caught.

Through May, imports of fresh and frozen tuna, particularly skipjack, were up sharply over last year, while imports of canned tuna were down slightly.

For the first half of 1971, total production of canned tuna was 6 percent higher than 1970, and tuna prices at all levels of distribution were much higher.

Landings of skipjack will probably continue to increase and help overcome shortages of yellowfin. The pack will likely be a little larger this year because greater supplies of skipjack will help maintain production. Prices will probably continue to increase although less rapidly than last year.

Table 1.— Retail prices of canned fishery products, for selected cities, July 1971

City	Salmon					Tuna				Sardine
	1 pound Red	1/2 pound Red	1 pound Pink	1/2 pound Pink	1 pound Chum	6—1/2 oz. Chunk light	7 oz. White	9—1/4 oz. Chunk light	12—1/2 oz. Chunk light	1/4 lb. domestic keyless oil 1/
	Dollars per can									
Atlanta	1.19	—	.87	.55	—	.45	.63	.67	.95	—
Boston	.98	.71	.78	—	—	.45	.54	.54	.86	.21
Chicago	1.07	.74	.87	—	—	.47	.54	.64	.86	.20
Dallas	1.09	.74	.87	.57	.79	.37	—	.56	.79	.19
Denver	.98	.67	.87	.51	—	.30	.46	.43	—	—
Houston	.99	.74	.85	.57	.78	.35	.49	.55	.75	.25
Little Rock	1.24	.79	.98	.56	.89	.43	.63	—	—	—
Los Angeles	1.09	.79	.83	.54	—	.35	.49	.49	.68	.23
New York	1.09	—	.89	—	—	.49	.55	—	—	.17
Seattle	1.18	.75	.99	.59	.75	.45	.56	.66	—	.27
St. Paul	.89	.79	.84	—	—	.35	.57	—	—	—
St. Petersburg	1.15	.75	.95	.59	.78	.43	.65	.68	.87	—
Washington	1.12	.75	.87	—	.81	.42	.55	.53	.77	.20

1/ Bureau of Labor Statistics, May 1971.

CANNED SALMON

Review

Supplies

Supplies Above First Half of 1970

Total supplies of canned salmon in the first half of 1971 were estimated to be 2.7 million standard cases, about a half million cases above the first half of 1970, but about even with the most recent 5-year average (table 2).

Both canners' and distributors' inventories on January 1, 1971, were substantially higher than at the beginning of 1970; however, inventories at the beginning of 1970 were lower than average.

Although the total 1970 pack was the largest since 1966 and the largest red pack since 1965, there were no major marketing difficulties during the first half of 1971. Despite abundant stocks of red salmon, for example, the quoted price of $41.50 for a case of red 1-pound talls has remained constant since December 1970.

The inventory picture for canned salmon during the first 6 months of 1971 was the reverse of 1970. Whereas pink salmon was the most abundant species in stock in 1970, red salmon was most plentiful in 1971 (fig. 1).

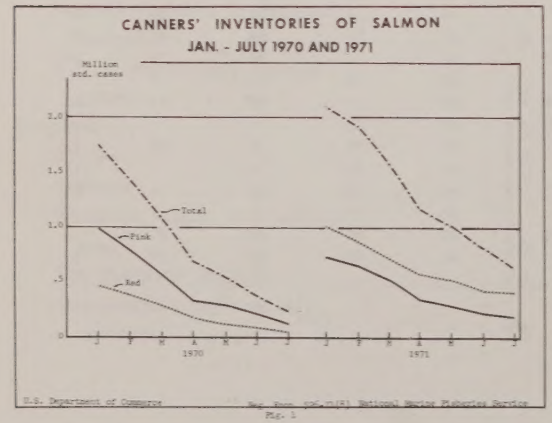

Fig. 1

Inventories at Higher Levels Than Last Year

In 1971, total canners' stocks of salmon started at higher levels than in 1970—around 2.2 million standard cases compared with 1.75 million in 1970. This increase was due to the above average pack in 1970.

Canners' stocks on July 1, 1971, were 583,000 standard cases, about 340,000 cases higher than on July 1, 1970, but almost 200,000 cases below the 1966–70 average. The higher July 1 stocks reflect (a) higher January 1 inventories than last year, and (b) anticipation of a lower pack. Distributors' stocks on July 1, 1971, were also slightly higher than last July—about 350,000 standard cases, or around an eighth higher than July 1, 1970.

On July 1, 1971, both canners' and distributors' stocks were higher than last year because of the difference in the anticipated salmon run in the 2 years. At the beginning of 1970, biologists were predicting a record pack for the salmon industry. Canners and distributors moved out stocks rapidly in the first half of 1970 in the anticipation of a large pack. In 1971, with a 30-percent smaller pack expected, the need to move inventories was not urgent.

Pack Lower Than Anticipated

Apparently because of colder than normal water temperatures, the run for almost all species has been later than usual.

Through August 1, the Alaskan pack was 48 percent below 1970. Pinks were 74 percent below last year, reds down 41 percent and chums off 25 percent (table 5).

It appears that either the pink salmon run will be much later than last year or it will be well below predictions. Pink salmon runs in most areas of Alaska are higher in even-numbered years, and lower in odd years; 1971 is expected to follow this pattern. Because of the extremely low pack of pinks, price quotations at Seattle stopped on July 23. Last Seattle sales were made at $35.00 per case.

Ketchikan has been a major canning area for pink salmon in recent years. The small pink salmon run in southeastern Alaska has curtailed canning operations there.

Table 2.— Supplies and utilization of canned salmon, 1965—71

Year/ Species	Supplies: Beginning stocks: Canners	Supplies: Beginning stocks: Distributors	Supplies: Production	Supplies: Imports	Supplies: Total	Utilization: Ending stocks: Canners	Utilization: Ending stocks: Distributors	Utilization: Exports	Utilization: Apparent consumption: Total	Utilization: Apparent consumption: Per capita
			Thousand standard cases							Pounds
1965	2,849.9	499.2	3,633.6	2.1	6,984.8	2,259.9	501.1	518.6	3,705.2 (177.8 mil. lbs.)	.919
1966	2,259.9	501.1	4,357.5	12.3	7,130.8	2,991.4	464.9	426.7	3,247.8 (155.9 mil. lbs.)	.797
1967	2,991.4	464.9	2,072.3	2.5	5,531.1	1,666.4	421.0	428.0	3,015.7 (144.8 mil. lbs.)	.748
1968—1st half										
King	63.1					35.6				
Red	876.0					443.9				
Coho	84.2					30.4				
Pink	435.9					104.1				
Chum	207.2					56.9				
Total	1,666.4	421.0		96.3	2,183.7	671.0	316.0	58.2	1,138.5 (54.65 mil. lbs.)	.274
1968—2d half										
King	35.6		70.2			56.7				
Red	443.9		714.6			638.3				
Coho	30.4		163.9			104.0				
Pink	104.1		1,841.6			1,035.1				
Chum	56.9		654.5			478.0				
Steelhead			2.8							
Total	671.0	316.0	3,447.7	7.0	4,441.6	2,312.1	434.0	61.1	1,634.4 (78.45 mil. lbs.)	.390
1969—1st half										
King	56.7					20.0				
Red	638.3					141.8				
Coho	104.0					42.7				
Pink	1,035.1					429.0				
Chum	478.0					242.2				
Total	2,312.1	434.0		31.5	2,777.6	875.8	433.0	72.9	1,395.9 (67.00 mil. lbs.)	.331
1969—2d half										
King	20.0		71.7			41.3				
Red	141.8		902.6			458.6				
Coho	42.7		59.4			46.3				
Pink	429.0		1,299.3			984.2				
Chum	242.2		183.8			226.7				
Steelhead			3.0							
Total	875.8	433.0	2,519.8	18.8	3,847.4	1,757.1	406.0	250.8	1,433.5 (68.81 mil. lbs.)	.341

Table 2.— Supplies and utilization of canned salmon, 1965—71 (continued)

Year/ Species	Supplies					Utilization				
	Beginning stocks		Production	Imports	Total	Ending stocks		Exports	Apparent consumption	
	Canners	Distributors				Canners	Distributors		Total	Per capita
	Thousand standard cases									Pounds
1970—1st half										
King	41.3					13.6				
Red	458.6					46.3				
Coho	46.3					13.9				
Pink	984.2					125.4				
Chum	226.7					43.9				
Total	1,757.1	406.0		15.4	2,178.5	243.1	324.3	127.4	1,483.7 (70.83 mil. lbs.)	.349
1970—2d half										
King	13.6		49.7			30.4				
Red	46.3		1,904.9			1,018.4				
Coho	13.9		134.0			91.5				
Pink	125.4		1,337.5			740.6				
Chum	43.9		487.0			317.0				
Steelhead			.2							
Total	243.1	324.3	3,913.3	35.5	4,516.2	2,197.9	452.2	222.8	1,643.3 (78.88 mil. lbs.)	.387
1971—1st half 1/										
King	30.4									
Red	1,018.4									
Coho	91.5									
Pink	740.6									
Chum	317.0									
Total	2,197.9	452.2		2/ 11.1	2,661.2	1/ 583.1	2/ 350.0	2/ 135.0	1,593.1 (76.47 mil. lbs.)	.372

1/ Preliminary.
2/ Estimated.

To complicate matters for the salmon canners, the West Coast Longshoremen's strike may hold up shipments of canned salmon. Some canned product is being shipped to Seattle, Washington, and Portland, Oregon. As the pack, especially pink salmon, increased toward the end of July and the beginning of August, the effects of the longshoremen's dispute were more seriously felt. The longshoremen's strike has tied up virtually all exports of canned salmon.

Four Major Transportation Companies Serving Alaska

Four main transportation companies now handle Alaska fishery products, including canned salmon. They are Sea Land, the Alaska Trainship Service, Red Stack Corporation (The Alaska Hydrotrain), and Foss Alaska Lines (Alaska Tug and Barge). Sea Land serves Kodiak, Prince William Sound, and Cook Inlet. The Alaska Trainship Service, a subsidiary of the Alaska Steamship Company, operates between the Alaska rail belt and Vancouver, British Columbia.

Table 3.— U.S. monthly wholesale prices of canned salmon, 1968—71 1/

Month	Red (sockeye)				Pink				Chum				King (chinook)			
	1968	1969	1970	1971	1968	1969	1970	1971	1968	1969	1970	1971	1968	1969	1970	1971
	Dollars per case 2/															
January	40.00	40.50	45.25	41.50	32.50	29.70	31.60	33.50	29.00	27.00	28.80	29.50	34.00	34.00	36.50	37.50
February	40.00	40.50	45.44	41.50	32.50	30.00	31.25	34.50	29.00	26.75	28.25	30.00	34.00	34.00	37.13	37.50
March	40.00	40.63	45.50	41.50	32.80	30.00	32.50	34.50	29.30	26.50	28.50	30.00	34.00	34.00	37.00	37.50
April	40.00	41.00	45.50	41.50	33.00	30.00	32.50	34.50	29.50	26.50	28.50	30.13	34.00	34.00	37.00	37.50
May	40.00	41.00	45.50	41.50	33.00	30.00	32.50	34.50	29.50	26.50	28.50	30.50	34.00	34.00	37.00	37.50
June	40.00	41.25	45.50	41.50	33.00	30.80	32.50	34.50	29.50	26.88	28.50	30.50	34.00	34.00	37.00	37.50
July	40.00	43.30	42.90	43.00	33.00	32.40	35.50	34.80	29.50	28.50	28.50	30.50	34.00	34.00	37.00	37.50
August	40.70	43.75	40.00		32.30	32.50	32.50		29.30	28.50	28.50		34.00	34.00	37.25	
September	41.00	44.13	40.00		31.00	32.50	33.50		28.50	28.50	28.50		34.00	35.00	37.50	
October	41.00	45.13	40.00		31.00	32.50	33.50		28.13	28.50	29.00		34.00	36.50	37.50	
November	40.50	45.25	41.13		30.00	32.50	33.50		27.38	28.88	29.50		34.00	36.75	37.63	
December	40.50	45.25	41.50		29.75	32.50	33.50		27.00	29.00	29.50		34.00	36.50	37.50	
Average	40.31	42.64	43.19		31.99	31.28	32.65		28.80	27.67	28.71		34.00	34.73	37.17	

1/ Average of the weekly prices reported by Seattle brokers and canners.
2/ Forty-eight 1-pound talls. Does not include discounts and promotional allowances.

Table 4.— Monthly average wholesale prices of red salmon, by selected can size, 1968—71 1/

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Dollars per case 2/												
48/talls													
1968	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.70	41.00	41.00	40.50	40.50	41.31
1969	40.50	40.50	40.63	41.00	41.00	41.25	43.30	43.75	44.13	45.13	45.25	45.25	42.64
1970	45.25	44.44	45.50	45.50	45.50	45.50	42.90	40.00	40.00	40.00	41.13	41.50	43.19
1971	41.50	41.50	41.50	41.50	41.50	41.50	43.00						
48/1/2's													
1968	25.25	24.38	23.50	23.50	23.50	23.50	23.50	23.50	20.50	20.50	21.37	20.50	22.79
1969	20.50	20.50	21.13	20.50	20.50	21.13	24.95	25.69	25.81	27.00	27.25	27.25	23.52
1970	27.25	27.06	27.00	27.00	27.00	27.00	26.85	26.63	26.75	26.75	27.50	27.75	27.05
1971	27.75	27.75	28.00	28.25	28.25	28.25	27.35						
48/1/4's													
1968	14.25	14.25	14.25	14.25	14.25	14.25	14.38	14.50	14.50	14.50	14.00	13.50	14.24
1969	13.50	13.50	13.75	13.50	13.50	13.50	13.90	14.50	14.63	15.00	15.38	15.12	14.15
1970	15.10	15.19	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.23
1971	15.25	15.25	15.25	15.25	15.25	15.25	15.25						

1/ Computed from weekly prices reported in Seattle Fishery Market News.
2/ Does not include price allowances.

Table 5.— Salmon pack by species, 1965–71

Species	1965	1966	1967	1968	1969	1970	1970 1/ through Aug. 1	1971 1/ through Aug. 2	Percentage change of '71 over 1970
	Thousand standard cases								Percent
King	131.6	83.7	91.4	70.2	71.7	49.7	31.1	27.0	+15
Chum	320.6	611.3	360.3	654.5	183.8	487.0	216.3	289.4	— 25
Pink	949.9	2,068.6	616.5	1,841.6	1,299.3	1,337.5	215.0	813.2	— 74
Red	2,041.2	1,385.5	863.2	714.6	902.6	1,904.9	1,045.7	1,785.1	— 41
Coho	186.2	205.5	138.9	163.9	59.4	134.0	9.4	27.6	— 66
Steelhead	3.7	2.9	2.0	2.8	3.0	.3	—	—	—
Total	3,633.2	4,357.5	2,072.3	3,447.6	2,519.8	3,913.4	1,517.5	2,942.3	— 48

1/ Alaskan pack.

The Alaska Hydrotrain covers Bristol Bay, the Kenai Peninsula, and parts of Kodiak through the use of an integrated system of barge and rail cars to transport salmon from the canneries in Alaska to Seattle. A through rate is charged from Seattle to points east.

Foss Alaska Lines, for the most part, covers Southeastern Alaska. The cargo is shipped in 24-foot vans to Seattle, via tug and barge. Because of the very low predicted pink salmon runs in Southeastern Alaska this year, the volume of canned salmon transported by the company is likely to be quite low. Last year, there were three to four canneries operating in Ketchikan. This year, no canning operations were planned in that area. A total of six native plants may be operating in all of Southeastern Alaska.

Demand

Prices Firm in First Half of 1971

Wholesale prices have remained firm for red salmon since December 1970. They were, however, $4.00 per case below the first half of 1970, reflecting their relatively "long" situation compared with last year. Prices of pinks rose in January from $33.50 (1-lb. case of talls) to $34.50 and remained mostly stable through July (tables 3 and 4). July prices of pink salmon were $2.00 above last year, as were chums.

Consumption Up Slightly

Total apparent consumption of canned salmon was an estimated 1.59 million standard cases, or 76 million pounds for the first 6 months of 1971—5 million pounds above the first half of 1970. Sales in January-June 1971, however, were almost 6 million pounds below the last half of 1970. Salmon shipments in the first half of the year are normally less than in the second half unless an unusually small pack is anticipated.

Exports Up Slightly

U.S. exports of canned salmon during January-June 1971 were slightly ahead of the past 3 years for the comparable period. They were estimated at 135,000 standard cases. Exports were below the average half-year total of around 200,000 cases during 1965–67. The British devaluation of the pound in 1968 was at least a partial cause of the decline in exports of canned salmon thereafter.

Outlook

Total supplies of canned salmon are estimated to be about 3 million standard cases during the second half of 1971—more than a million cases below last year. Canners' and distributors' inventories on July 1 were about a million standard cases. We estimate the final 1971 pack to be around 1.9 million standard cases, or 51 percent below 1970.

Half and Quarter-Pound Pack May Increase

In years when the salmon pack is lower than average, canners tend to process a larger percentage of half and quarter-pound cans. The smaller sizes generally afford a greater markup to canners, and in periods of lower volume, total margins can be more stabilized. With the expected small pack in 1971, half and quarter-pound cans will probably be more prevalent, especially for red salmon.

Because of the temporary stoppage of exports in July, exports during the second half of 1971 will likely pick up for a short time; however, no large increase is expected because of the short pack.

Prices Rise

Because of relatively low production, prices for both red and pink salmon are now rising as the short pack comes in. Prices for canned salmon normally fluctuate in the fall as shipments are adjusted to the new pack inventory.

Consumption Down From Second Half of 1970

With expectation of firm or rising prices, and a lower than normal pack, consumption of canned salmon for the second half of 1971 will most probably be between 57 and 62 million pounds, about 18 to 21 million pounds below the second half of 1970, and substantially less than the 68 million pounds sold during July-December 1969. If less than 70 million pounds are consumed during the next 6 months, it will mark the first time since before 1965 that consumption in the second half of the year has been substantially below the first half.

Stocks at Start of 1972 Expected Close to 1971 Levels

If the pack for 1971 is approximately 1.9 million standard cases, and consumption and exports in the last half of the year are about 1.4 million standard cases (67 million pounds), inventories on January 1, 1972, will be close to 1.6 million standard cases, slightly lower than stocks at the start of 1971.

Market Patterns for Canned Salmon

Consumption patterns for canned salmon from 1958 to 1970 have shown some major, and what appear to be permanent, shifts. These changes have been reflected in both species consumed and socio-economic characteristics of consumers. These changes were shown in consumer surveys sponsored by the Bureau of Commercial Fisheries (now National Marine Fisheries Service) in 1958—59 and 1969—70. 1/ The major changes indicated by the two surveys were: (a) a marked decline in purchases of canned king, silver, and chum salmon (classified in the 1969—70 study as "other" canned salmon), and (b) increased consumption of red salmon, particularly at higher income and education levels.

Percentage of canned salmon consumption in the two periods was reported as follows:

	1958—59	1969—70
Red salmon	21	36
Pink salmon	53	61
Other salmon	26	3

Several reasons partially explain the reported decline in consumption of other canned salmon. They include the following:

(a) *Change in Composition of Pack*

In 1958, when the first market survey was conducted, a substantially larger percentage of king, silver, and chum salmon were packed than in 1969:

Percentage of Salmon Canned by Species

	1958	1969
Red	16	34
Pink	53	54
King, silver, chum	31	12
	100	100

1/ 1958—59 survey—6,000 respondents.
1969—70 survey—1,500 respondents.

These species will most probably remain a smaller percentage of the total canned salmon pack and hence, of consumption, than they were 10 years ago. This change is primarily because of the expansion of other market forms for these species.

(b) *Lack of Consumer Recognition*

Partially contributing to the lower consumer response in the king, silver, and chum canned salmon category in the 1969—70 survey was the apparent lack of differentiation by the consumer between these "other" canned salmon and pink salmon. The 1969—70 survey did *not* itemize the "other" canned salmon category, whereas the 1958—59 survey did. Most probably actual consumption of canned king, silver, and chum salmon was higher than the survey responses indicated. Table 6 shows that in 1969 a much higher percentage of king, silver, and chum salmon was shipped out than the survey showed. Evidently, many consumers did not clearly recognize the different canned species other than red and pink salmon.

(c) *Growth of Frozen Markets*

An additional explanation for the decline in consumption of the "other" category of salmon has been the growth of markets for frozen salmon. A greater percentage of salmon landings, particularly king and silver, are being sold in the fresh and frozen form rather than as canned salmon. In 1970, around 74 percent of all salmon was canned compared to 88 percent in 1960.

Table 6.— Household consumption of canned salmon versus shipments

Month	Shipments from 1/ canners, by species 1965—70 average			Month	Consumption by species 1969—70		
	Red	Pink	Other 2/		Red	Pink	Other 2/
	— — Percent — —				— — Percent — —		
January	37	41	22	January	)		
				February	) 38	58	4
February	31	49	19	March	)		
March	34	47	18	April	)		
				May	) 36	60	4
April	39	40	21	June	)		
May	31	49	20	July	)		
				August	) 36	61	5
June	36	43	21	September	)		
July				October	)		
August	39	40	21	November	) 32	65	3
September				December	)		
October							
November	32	42	26				
December	34	42	23				

1/ National Canners Association.
2/ King, silver, chum.

Other Changes in Market Characteristics

A major change in the character of canned salmon markets from 1958 to 1970 has been increased consumption of red salmon. Red salmon in 1969 represented 34 percent of the total salmon pack, compared to 16 percent in 1958, or an increase of 135,000 standard cases. Consumption by region, income, education, and household size all indicate a shift in the pattern of purchasing red salmon.

Consumption by Region

In 1958—59, pink salmon accounted for the bulk of canned salmon consumed in all areas of the country (table 7 and figure 2). In the South, 72 percent of all canned salmon purchased was pink, while red salmon represented only 4 percent. The strongest areas for reds in 1959 were the Northeast and Pacific with about 34 percent of the market—still not approaching pink's share of 41 to 43 percent in these areas.

In 1969—70, red salmon, partially because of a larger pack, had strengthened its market share in all areas, surpassing pink salmon in New England and the Pacific region. Red salmon was rapidly approaching sales of pink salmon in the North Central and Middle Atlantic areas. Even in the South, traditionally a pink stronghold, red salmon was beginning to increase.

Income and Education

Sales of red salmon have apparently benefited from higher levels of both income and education attained since 1958.

In 1958, pink salmon was the leading species consumed among all income groups surveyed (table 8). A higher percentage of pink, king, silver, and chum salmon was consumed in the lower income groups, while red salmon enjoyed greatest popularity in families with incomes of $7,000 and above. In 1969—70, red salmon showed up stronger in all income categories. Pink salmon still remained the biggest seller at all income levels, with the exception

Table 7.— Canned salmon consumption, by region, 1958—59, and 1969—70

Species	1958—59					1969—70								
	North East	South	Central	Middle & South West	Pacific	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
	Standard cases per 1,000 families													
Red	17.7	3.9	17.1	12.2	10.3	38.1	38.7	36.8	35.6	41.8	20.7	23.8	29.1	41.1
Pink	20.6	64.5	27.1	32.9	12.9	20.0	46.2	50.7	44.4	129.0	154.9	73.1	48.1	33.2
Other	11.9	21.2	16.4	21.1	6.8	2.3	5.8	3.2	1.9	3.3	5.5	4.8	1.3	1.8
Total	50.2	89.6	60.6	66.2	30.0	60.4	90.7	90.7	81.9	174.1	181.1	101.7	79.0	76.1
	Percent													
Red	35	4	28	18	34	61	43	40	44	24	11	23	38	54
Pink	41	72	45	50	43	35	51	56	54	74	86	72	61	44
Other	24	24	27	32	23	4	6	4	2	2	3	5	1	2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 8.— Consumption of canned salmon, by family income

(Cases per 1,000 families)

Species	1958—59					
	Less than $4,000		$4,000 to $6,999		$7,000 and over	
	Cases	Percent	Cases	Percent	Cases	Percent
Red	8.1	14	14.3	23	19.3	32
Pink	34.7	58	30.9	50	29.3	49
Other 1/	17.2	28	16.3	27	11.7	19
Total	60.0	100	61.5	100	60.3	100

Species	1969—70							
	Less than $4,000		$4,000 to $6,999		$7,000 to $10,000		More than $10,000	
	Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent
Red	34.6	28	38.5	32	84.3	31	84.4	52
Pink	83.6	68	156.6	63	178.5	66	72.7	45
Other 1	4.8	4	12.6	5	6.3	3	5.8	3
Total	123.0	100	250.7	100	269.1	100	162.9	100

1/ King, silver, chum.

of families whose income exceeded $10,000. Here, red salmon accounted for 52 percent of sales.

Red salmon consumption had the greatest percentage increase in low income groups from 1958—59 to 1969—70. Aside from consideration of income, the tastes and preferences of consumers may have shifted toward red salmon.

In 1958—59, households whose heads attained higher education levels tended to buy more red salmon than those household heads with less education. At all educational levels, however, pink salmon retained the largest share of the market. By 1969—70, families headed by college graduates were purchasing 53 percent of the red salmon as compared to only 34 percent in 1958—59 (table 9).

CONSUMPTION OF CANNED RED SALMON BY REGION

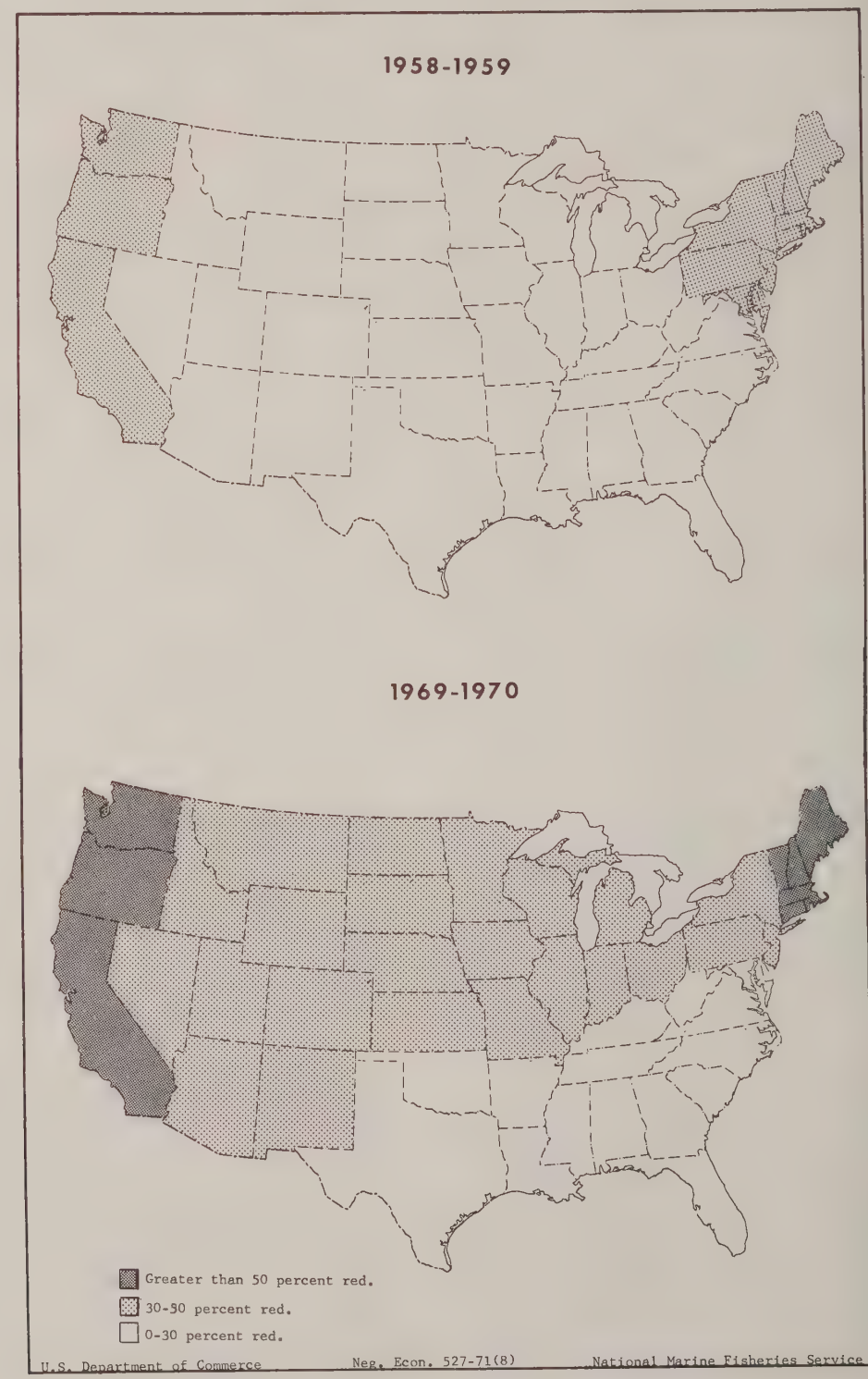

Fig. 2

Table 9.— Consumption of canned salmon, by education level

(Cases per 1,000 families)

Species	1958—59					
	Grade school		High school		College	
	Cases	Percent	Cases	Percent	Cases	Percent
Red	10.6	16	13.9	23	16.8	34
Pink	38.8	57	30.5	52	22.0	44
Other 1/	18.5	27	14.8	25	11.4	22
Total	67.9	100	59.2	100	50.2	100

Species	1969—70							
	Less than 4 years high school		Less than 4 years college		College graduate		Not specified	
	Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent
Red	39.3	33	30.0	35	29.4	53	16.5	45
Pink	76.9	64	52.9	62	23.2	42	17.1	50
Other 1/	4.0	3	3.1	3	2.7	5	1.4	4
Total	120.2	100	86.0	100	55.3	100	34.1	100

1/ King, silver, chum.

Consumption By Household Size

Both red and pink salmon increased their share of the canned market in all household sizes, at the expense of king, silver, and chum salmon (table 10). Surprisingly, pink salmon had the greatest increase in the purchases of smaller household sizes—1 to 3 persons—whereas red salmon sales were much stronger in large households for 1969—70, as compared to 10 years earlier. This shift suggests that many large families now apparently have sufficiently high incomes to purchase the higher priced red salmon.

One explanation for the stronger position of pink salmon in smaller household purchases is that 1/2-pound cans of pink salmon have become more popular since 1958. The proportion of red salmon packed in smaller can sizes has not changed significantly in the past 12 years.

Table 10.— Consumption of canned salmon, by size of household

Species	1958—59					
	Number of persons in household					
	1—3	4—5	Over 5	1—3	4—5	Over 5
	Cases per 1,000 families			Percentage		
Red	29.7	12.3	10.2	29	16	10
Pink	50.4	41.8	60.4	49	56	60
Other 1/	22.3	20.9	30.0	22	28	30
Total	102.4	75.0	100.6	100	100	100

Species	1969—70					
	Number of persons in household					
	1—3	4—5	Over 5	1—3	4—5	Over 5
	Cases per 1,000 families			Percentage		
Red	66.7	27.5	17.3	35	32	25
Pink	114.4	54.8	44.6	61	65	66
Other 1/	7.5	2.5	6.2	4	3	9
Total	188.6	84.8	68.1	100	100	100

1/ King, silver, chum.

Product Mix By Can Size

Production requirements resulting from large landings usually influence the product mix for canned salmon by can size.

The proportion of salmon processed into 1, 1/2, 1/4, and 4-pound cans is determined primarily by the quantity of salmon caught in any given year. In 1965, for example, when 2,000,000 cases of red salmon were packed, 72 percent were in 1-pound cans. The year before, when the red pack was 777,000 cases, only 61 percent were put up in 1-pound cans.

Since 1958, average family size has decreased. There has been a significant increase in the percentage of the population living in urban areas and general incomes have increased to the point where a larger proportion of the population can buy on the basis of factors other than strictly price. All of these factors seem to point to an increased demand for smaller size cans of salmon in the consumer market.

Table 11.— U.S. canned salmon exports, by country of destination, 1969—71

Country	1969	1970	1971 1/
	Million pounds		
United Kingdom	8.1	8.4	3.0
Belgium	1.0	.8	.9
Netherlands	1.8	1.7	.6
Canada	2.9	4.0	.3
Australia	.5	.4	.2
Other	1.2	1.5	.5
Total	15.5	16.8	5.5

1/ January through May.
Source: U.S. Department of Commerce, Bureau of Census.

Table 12.— Japanese and Canadian exports of canned salmon, by country of destination, 1969—71

Country of destination	Japanese					
	1969		1970		Jan.-Feb. 1971	
	Million pounds	Percentage	Million pounds	Percentage	Million pounds	Percentage
United Kingdom	27.8	56	36.0	68	6.0	60
Australia	9.4	19	5.4	10	2.2	22
Netherlands	3.0	6	4.0	8	.4	4
France	2.1	4	2.1	4	.3	3
South Africa	—	—	—	—	.4	4
Belgium	3.2	6	2.0	4	.2	2
Other	3.7	9	3.5	6	.5	5
Total	49.2	100	53.0	100	10.0	100

Country of destination	Canadian					
	1969		1970		Jan.-April 1971	
	Million pounds	Percentage	Million pounds	Percentage	Million pounds	Percentage
United Kingdom	229.0	65	57.4	37	37.3	44
New Zealand	—	—	16.4	11	—	—
Italy	—	—	9.7	6	—	—
Belgium	19.8	6	10.5	7	12.9	15
United States	13.0	4	—	—	9.5	11
Other	88.5	25	59.1	39	25.1	30
Total	350.3	100	153.1	100	84.8	100

EXPORT MARKET FOR CANNED SALMON

U.S. exports of canned salmon in 1970 totaled 16.8 million pounds, or about one-tenth of the salmon pack. Exports were 1.3 million pounds higher than in 1969, and almost triple the 1968 level, when the United Kingdom devalued her pound. Exports in 1970 were still substantially below the 20 to 25 million pounds exported annually in 1965—67 before the United Kingdom devaluation.

Exports of canned salmon during the first 6 months of 1971 were estimated at 6.5 million pounds, slightly ahead of the 6.1 million pounds exported last year, but they may slow down considerably in the second half of 1971 because of the lighter than usual pack.

The largest market for United States exports of canned salmon continues to be the United Kingdom, followed by Canada, the Netherlands, and Belgium (table 11). The United Kingdom market demands, to a large extent, 1/4-pound cans of red salmon. In 1971, the composition of United States exports of canned salmon through May remained about the same, with the United Kingdom representing 53 percent of the market.

The United States appears to depend most heavily on the United Kingdom market in months immediately following the pack—during August and September as much as 75 to 90 percent of United States exports of salmon go to the United Kingdom. During the early part of the calendar year, exports go to several countries. Countries that have begun to use more United States exports in the past year and a half include Canada and Australia. Canada's imports of canned salmon from the United States, however, most likely represent attempts to supplement supplies during years when the pack is light. The same explanation probably holds true for United States imports of Canadian canned salmon.

The United States' strongest competitors for the United Kingdom market are now Canada and Japan, in that order, with the Soviet Union becoming an increasingly important factor. Canadian exports of canned salmon to the United Kingdom in 1970 were 57.4 million pounds compared with Japanese exports of 36 million pounds, whereas the United States shipped only about 8 million pounds to the United Kingdom (table 12). Both Canada's and Japan's pack of canned salmon are predominantly half-pound cans, whereas the United States continues to pack mostly 1-pound cans for the domestic market and halves and quarters for both domestic and export markets.

Japan, Canada, and the United States will have relatively small packs of salmon in 1971. Both Japan and Canada rely to a much greater extent on world markets for salmon than does the United States. Because of this, the possibility is good that in smaller pack years such as 1971, each will allocate stocks first to their highest priority markets. For the United States, this means the domestic market; for Japan and Canada, the world market. This would indicate that the United States might have a decreased share of the United Kingdom market for canned salmon in 1971.

Over the past 3 years, however, Canada appears to be depending less on the United Kingdom as an export market for salmon. In 1969, the United Kingdom took 92 percent of Canada's exports for red salmon. In 1970, the percentage declined to 75 and through April of 1971, the United Kingdom, although still Canada's dominant export market, had taken 74 percent of Canada's red salmon exports.

There is much speculation concerning what effect Britain's entry into the Common Market will have on United States exports to that nation. Canada presently enjoys "favored nation" status, but this could be altered by the United Kingdom move. Canada would perhaps not have as strong a foothold in the United Kingdom market as before, leaving open the possibility of gains on the part of Japan and/or the United States. Counterbalancing this development could be tariff and non-tariff barriers imposed by the Common Market. This would result in higher prices for canned salmon and, conceivably, reduced consumption in the United Kingdom.

Other countries presently in the Common Market represent considerable potential for U.S. canned salmon in the future. The Netherlands and Belgium have been of continuing importance to United States exporters of canned salmon. In 1970, these two countries accounted for 2.5 million pounds of U.S. canned salmon exports, or around 15 percent of the total. France has traditionally been a strong fish consuming nation in Europe, with a per capita consumption of over 20 pounds higher than Belgium or Netherlands, and about even with the United Kingdom. Japanese exports of canned salmon to France have been over 2 million pounds annually in recent years. Although a negligible market for United States canned salmon, France is presently a major market for fresh and frozen salmon and could conceivably make up some of the possible slack lost from United Kingdom entry into the Common Market.

SARDINES

Review

Supplies

Total supplies of sardines for the first half of 1971 were estimated at 41.4 million pounds, compared with 43.0 million pounds available in the first half of last year. Imports provided a greater percentage of these supplies than last year. Stocks at the beginning of 1971 were about 8 million pounds lower than at the start of 1970.

Domestic Pack— Ahead of Last Year

The domestic pack through June was 4.9 million pounds, over three times the level in the same period last year (table 13). However, the pack for the first 6 months is usually only a small portion of the total pack for the year.

Imports—Up 11 Percent

Imports through May were 22.4 million pounds, 11 percent greater than in the first 5 months of 1970 (table 14). Imports "in oil" were only slightly ahead of last year, but imports "not in oil" were running almost one-third greater than last year. The most pronounced shifts were in imports "not in oil" from Japan and the Republic of South Africa. Japan exported 1.8 million pounds of sardines to the United States in January-May, compared to 0.1 million for all of 1970. This influx from Japan, however, was offset by an almost 2-million-pound drop in imports from South Africa. Because of the shortage of South African pilchards, imports of sardines from that nation have been falling since the high in 1966 of 30 million pounds.

Table 13.— Supplies and utilization of domestic and imported sardines, by quarter, 1969—1971

(Product weight)

Year	Supplies				Utilization			
	1/ Production	2/ Imports	3/ Beginning stocks	Total	3/ Ending stocks	Exports	Apparent consumption	
							Total	Per capita
	Million pounds							Pounds
1969								
1st quarter	2.2	9.1	23.3	34.6	19.5	0.1	15.0	0.075
2d quarter	4.0	13.1	19.5	36.6	16.0	.3	20.3	.101
3d quarter	14.1	11.6	16.0	41.7	18.3	.9	22.5	.111
4th quarter	4.1	11.6	18.3	34.0	18.6	.9	14.5	.069
	24.4	45.4	23.3	93.1	18.6	2.2	72.3	.356
4/ 1970								
1st quarter	.3	12.5	18.6	31.4	12.8	.3	18.3	.090
2d quarter	1.2	10.4	12.8	24.4	6.2	.2	18.0	.089
3d quarter	11.7	11.7	6.2	29.6	11.1	.6	17.9	.088
4th quarter	5.7	12.5	11.1	29.3	10.2	.4	18.7	.092
	18.9	47.1	18.6	84.6	10.2	1.5	72.9	.359
4/ 1971								
1st quarter	1.8	13.2	10.2	25.2	10.0	.4	14.8	.072
2d quarter	3.1	5/ 13.1	10.0	26.2	5/ 8.7	.1	17.4	.085

1/ Production estimated by quarter.
2/ Includes some canned sea herring.
3/ Canners and distributors stocks of Maine sardines.
4/ Preliminary.
5/ Estimated.

Table 14.— Sardine imports, by country of origin, January-May, 1970, and 1971

Country	1970	1971
	Thousand pounds	
In Oil		
Canada	1,845	1,990
Venezuela	155	107
Norway	7,719	7,858
Denmark	1,520	529
Portugal	1,706	2,421
Morocco	37	370
Other	1,832	970
Total	14,814	14,245
Not in oil		
Japan	1,801	59
Rep. of South Africa	316	2,291
Other	5,438	3,390
Total	7,555	5,740
Grand total	22,369	19,985

Source: Bureau of Census.

Demand

Retail Prices— Increasing Steadily

Retail prices for domestic sardines have been increasing for the past 12 months and are now over 3 cents a can higher than a year ago (table 15). Wholesale prices this year remained steady through May, but increased in June. As of June, the wholesale price was 17 percent above the year-ago level.

Consumption— Down 10 Percent

Estimated consumption of sardines in the first half of 1971 was 32.2 million pounds, about 10 percent lower than in either half of 1970. In the first quarter

Outlook

Supplies

of 1971, total supplies of sardines were one-fifth below first quarter 1970. Because of the small pack in 1970, stocks at the beginning of 1971 were only a little more than half as much as a year ago. In the second quarter, processors and distributors shipped more out of inventories than in the first quarter in anticipation that the pack would increase sharply in the third quarter. Also, in the second quarter, the pack was about 2 million pounds higher than a year ago. Consumption increased from the first quarter as the supply situation eased in the second quarter. Consumption in the second quarter of 1971 was an estimated 17.4 million pounds compared with 18.0 million pounds last year.

Domestic Pack— No Increase Seen

Total supplies of sardines for the last half of the year are expected to be about 51 million pounds. Prospects for the domestic pack of sardines in the second half of 1971 are not encouraging. The July-December pack is estimated at about 17 million pounds, about the same as in July-December last year. Indications are that landings of juvenile herring in traditional U.S. fishing areas will, at best, be equal to

Table 15.— Monthly exvessel, wholesale and retail prices of Maine sardines, 1966—71 1/

Prices/Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Average
						Cents per pound 2/							
Exvessel price (Maine)													
1966	2.2	1.6	1.6	1.4	1.7	2.0	1.9	2.3	2.1	2.3	1.6	2.1	1.9
1967	2.4	2.4	2.4	2.3	2.3	2.5	2.5	2.4	2.4	2.3	2.3	2.0	2.4
1968	2.5	1.9	2.5	2.2	2.5	2.2	2.4	2.5	2.5	2.5	2.5	2.4	2.4
1969	2.4	2.5	2.5	2.5	2.5	2.1	1.7	1.4	1.7	1.8	2.1	2.1	2.1
1970	—	2.0	—	—	2.0	1.9	2.0	1.8	1.7	1.7	1.4	1.9	1.8
1971	—												
						Dollars per case 3/							
Wholesale price													
1966	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25	11.25	11.25	11.25	10.50
1967	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	12.00	12.25	12.25	12.25	11.56
1968	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25
1969	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.25	12.63	12.63	12.31
1970	12.63	13.50	13.50	13.50	13.50	13.50	13.50	14.25	15.25	15.25	15.25	15.25	14.07
1971	15.25	15.25	15.25	15.25	15.25	15.75							
						Cents per can 4/							
Retail price													
1966	13.9	14.0	14.0	14.1	14.2	14.2	14.2	14.3	14.3	14.3	14.6	14.7	14.2
1967	15.3	15.0	15.1	15.3	15.0	14.9	14.9	14.9	15.0	15.1	15.4	15.5	15.1
1968	15.8	16.0	15.8	15.8	16.0	16.1	16.1	16.1	16.2	16.3	16.3	16.3	16.1
1969	16.3	16.5	16.4	16.5	16.4	16.5	16.5	16.4	16.5	16.6	16.6	16.6	16.5
1970	16.5	16.6	16.6	16.9	17.1	17.3	17.2	17.4	17.8	18.2	18.7	19.0	17.5
1971	19.3	19.6	19.7	19.8	20.0	20.4							

1/ Keyless, oils.
2/ Round weight.
3/ 100 -1/4-lb. cans per case. New York prices taken on Monday or Tuesday of the week in which the 13th day of the month falls.
4/ U.S. average prices 1/4-lb. can as reported by the Bureau of Labor Statistics.

1970 landings; therefore, increases in domestic pack may have to come from increased imports of sea herring. In 1970, about half the domestic pack was produced from Canadian-caught herring. Supplies of juvenile herring in Canadian waters close to the United States have been declining, and there are no signs of any improvement. The herring resource is, however, still quite unpredictable.

Adult herring are in better supply than juvenile herring and will probably be used, to a greater extent, not only in production of 15-ounce ovals, but also in products such as canned fillets and steaks. At the same time, utilization of adult herring for pickling, salting, and export of fillets and butterfly products could increase.

Imports—Some Increase Expected

Imports of sardines in the latter half of 1971 are estimated at about 26 million pounds, compared with 24 million pounds in the same period last year. The quantity and price of U.S. sardine and herring imports will be closely related to world availability of raw material resources and to various countries' allocation of the resource between such alternatives as meal, sardines, and other herring products. Table 17 persents the historical pattern of sardine imports. The following is a brief review of the herring prospects in various countries.

Table 16.— Retail prices for Maine sardines, U.S. average, and selected cities, 1970—71 1/

City	1970												1971				
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
	Cents per can																
2/ U.S. average	16.5	16.6	16.6	16.9	17.1	17.3	17.2	17.4	17.8	18.2	18.7	19.0	19.3	19.6	19.7	19.8	20.0
New York	14.5	14.4	14.5	14.5	14.7	14.8	14.8	14.9	15.4	15.8	16.2	16.5	16.2	16.6	16.6	16.6	16.7
D.C.	15.9	15.3	15.4	15.7	15.9	17.3	17.3	16.5	16.6	16.5	17.0	17.3	18.3	18.1	18.5	18.8	19.7
Detroit	15.9	15.5	15.6	16.0	16.3	16.3	16.3	16.5	17.1	17.8	18.0	18.0	18.2	18.5	18.3	17.9	18.5
Baltimore	15.8	15.5	15.5	15.8	15.8	16.0	16.0	16.7	16.9	16.3	16.4	16.9	19.2	19.8	20.9	20.4	20.8
Chicago	16.1	16.2	15.9	16.8	17.1	17.0	17.0	17.0	17.0	17.2	18.3	18.6	19.2	19.4	19.5	19.7	19.7
Philadel.	15.1	15.2	15.4	15.5	16.5	17.1	17.3	17.4	18.3	18.6	20.2	20.0	20.8	20.9	20.8	20.9	21.6
Milwaukee	17.6	17.4	17.4	17.8	18.0	18.0	18.2	18.3	18.6	18.8	19.1	18.7	19.0	19.2	20.2	20.7	20.9
Pittsburg	18.3	18.3	18.9	18.3	18.3	18.3	18.3	18.3	18.8	18.8	19.0	19.0	18.9	19.2	18.5	18.3	—
Dallas	17.8	17.7	18.1	18.8	19.0	19.1	18.8	19.0	19.0	19.9	18.7	19.1	18.9	19.0	19.1	18.8	19.0
Boston	17.7	17.6	17.7	17.9	18.0	18.0	18.0	18.2	18.3	19.2	19.8	19.7	20.5	20.8	20.8	21.1	21.3
Kan. City	17.6	17.6	17.8	18.5	19.0	18.7	18.4	18.5	18.5	18.9	19.4	19.8	20.2	20.6	20.3	19.9	19.7
Honolulu	18.3	17.9	18.9	18.5	18.4	18.5	18.6	18.6	18.7	19.3	19.9	19.6	19.7	19.7	20.2	21.3	21.5
Minnapo.	16.9	17.2	18.3	18.4	18.3	18.4	18.5	18.5	19.3	20.0	20.5	20.9	21.0	21.3	21.5	22.1	21.8
St. Louis	18.3	18.4	18.3	18.4	18.7	18.8	19.1	19.1	19.6	20.1	20.1	20.2	20.8	21.3	21.2	21.2	21.5
Cleveland	18.4	18.5	18.5	18.8	18.8	18.8	18.9	19.0	19.9	19.8	20.3	21.8	22.4	22.7	22.8	22.7	23.1
L. A.	19.2	19.3	19.6	19.9	20.1	20.2	20.2	20.5	20.9	21.4	21.8	22.1	22.2	22.9	23.0	23.1	23.2
San Diego	19.2	19.2	19.5	20.0	20.3	20.4	20.7	20.4	21.4	21.8	22.2	22.3	23.8	23.6	23.0	23.0	23.5
Houston	18.8	19.6	19.5	19.4	20.2	19.8	20.6	20.6	20.9	20.4	21.5	22.5	24.3	24.3	24.9	24.7	24.6
San Fran.	20.0	20.1	20.4	20.7	20.7	20.7	20.0	20.1	21.0	21.5	22.1	22.3	24.5	24.6	24.8	24.7	24.8
Seattle	20.8	21.1	22.0	22.0	22.2	22.5	22.2	24.7	25.2	25.5	25.5	26.7	26.5	26.5	26.6	26.6	26.6
Cincinn.	20.5	20.9	21.0	22.0	22.0	22.0	22.2	22.3	22.7	22.3	24.4	24.7	25.2	25.2	25.4	25.4	25.1
Buffalo	22.3	22.7	22.7	23.5	23.8	23.9	24.3	24.3	24.5	24.7	25.1	25.1	25.8	25.8	25.8	25.7	25.6

1/ Prices quoted are for keyless 1/4-lb. oils, except for Cincinnati and Buffalo for which prices are for cans with a key or pull tab.

2/ U.S. average price, 38 cities, as reported by the Bureau of Labor Statistics.

Canada

Total Canadian exports of sardines decreased from 16.1 million pounds in 1968 to 15.2 million pounds in 1970. The drop in sardine exports is probably attributable to the shortage of juvenile herring, but exports to the United States increased from 1969 to 1970 because of the stronger market here. These trends are expected to continue in 1971, with a slight increase in Canadian exports to the United States.

Total Canadian exports of vinegar cured or pickled herring increased from 17.8 million pounds in 1969 to 40 million pounds in 1970. In 1970, in contrast to 1969, substantial quantities of processed herring products were exported to European countries. It appears that even though Canadian landings have decreased in the last 3 years, exports of herring for human consumption have increased.

Norway

The herring resource in the North Sea has been overfished, and there is a downward trend in landings. Closed season regulations presently in force are scheduled to expire in early 1972. New regulations probably will increase restrictions on the taking of herring. If, however, there are any limitations placed on the use of herring for industrial purposes, then exports of sardines to the United States might increase despite lower landings.

Portugal

Landings in 1970 were 9 percent above 1969, and it appears that the resource is improving slightly. Landings are still only about half the levels of the early 1960's. The current fishing season began in July. The prospects now are uncertain, although no great change from 1970 is expected.

Denmark

Since 1965, North Sea herring catches by Denmark have declined, leading to a shortage of herring for filleting and export. Denmark has had to supplement its herring landings by landings from Swedish and Icelandic vessels and has even imported some herring from Canada.

Table 17.— Sardine imports, by country of origin, 1965—70

Country	1965	1966	1967	1968	1969	1970	1965	1966	1967	1968	1969	1970
	1,000 pounds						Percent					
	Not in oil						Not in oil					
South Africa	21,081	30,260	23,331	24,880	12,669	5,066	89.6	89.0	86.6	81.8	69.8	39.5
Norway	1,866	2,893	2,808	4,413	4,433	5,742	7.9	8.5	10.4	14.5	24.4	44.7
Canada	91	178	387	564	380	586	.4	.5	1.4	1.9	2.1	4.6
Denmark	34	90	103	145	165	204	.1	.3	.4	.5	.9	1.6
Portugal	1	6	57	59	25	50	.0	.0	.2	.2	.1	.4
Others	465	560	259	371	474	1,190	2.0	1.6	1.0	1.2	2.6	9.3
Total	23,538	33,987	26,945	30,432	18,187	12,838	100.0	100.0	100.0	100.0	100.0	100.0
	In oil						In oil					
Norway	12,488	12,860	13,493	15,663	15,168	18,848	57.8	54.5	52.9	55.1	55.7	55.3
Portugal	5,027	6,024	5,229	5,815	5,809	5,170	23.4	25.5	20.5	20.5	21.3	15.2
Canada	286	1,083	3,425	3,242	1,943	4,344	1.3	4.6	13.4	11.4	7.1	12.8
Denmark	851	719	701	1,136	1,642	2,013	4.0	3.0	2.8	4.0	6.0	5.9
Others	2,919	2,915	2,647	2,580	2,658	3,692	13.6	12.4	10.4	9.1	9.9	10.8
Total	21,532	23,601	25,494	28,436	27,220	34,067	100.0	100.0	100.0	100.0	100.0	100.0

Source: Bureau of Census.

South Africa

The Divison of Sea Fisheries in Southwest Africa predicts another poor pilchard fishing season. Indications are that anchovies have either moved in to replace the pilchards or have driven them away. A 90,000-ton per year catch, which the canning factories were allowed, has changed from a 50 — 50 split between anchovies and pilchards to 45,000 tons and 30,000 tons respectively.

Japan

The herring have been returning in small quantities to the Port of Igarashihama (located on the west coast of the main island) after a 25-year absence. This increased resource does not seem to be related to the sudden influx of very low valued sardine imports from Japan. These imports from Japan could be a tomato pack that Japan has exported to the Philippines in the past. At this stage, there is not enough information to accurately judge this development, but it warrants attention in the future.

Summary

The overall trends in imports from most countries are up, and the indications are that there will be a further increase in imports of sardines in the next 6 months. This assumes increased imports from Japan will balance lower imports from South Africa.

There could be a shift toward greater utilization of herring for human consumption because of a sharp decline in the price and large stocks of fish meal. The price of Peruvian fish meal in the United States (f.o.b. East Coast and Gulf ports) averaged $185 per ton in January 1971. As of July 26, the price had dropped to $157 per ton.

Demand

Further Price Increases Expected

Prices for domestic sardines will continue to increase as costs increase and as a greater percentage of the pack is composed of "flip-top" cans. We estimate that a "flip-top" can sells for about 2 cents more than a keyless can.

There are no indications, as yet, that the increased retail prices of domestic sardines have hurt consumption. Consumption of all sardines in the latter half of 1971 is estimated to be 36 to 37 million pounds —about 4 million pounds more than the first half of 1971, and about the same as in the second half of 1970. This would leave inventories at the end of 1971 at the low level of 10 to 11 million pounds, but slightly higher than at the beginning of 1971.

RESOURCE SUPPLY AND UTILIZATION

The consensus of most biologists of the International Commission on Northwest Atlantic Fisheries (ICNAF) is that the sea herring resource in the Northwest Atlantic is being overfished and that stocks are decreasing. ICNAF statistics indicate that the high point in herring landings was in 1968, when over 2 billion pounds were caught (table 18). Catch per unit of effort has declined since then.

The trend in U.S. landings of herring has been downward, and in the past few years, a smaller percentage have been the juvenile herring, which are used for canning (table 19).

Total estimated U.S. supplies (landings and imports) of Atlantic sea herring in 1970 were 172 million pounds. Following is an estimate of the use:

... About 30 million pounds were used to produce a pack of 18.9 million pounds of canned sardines.

Table 18.— ICNAF area herring landings, by country, 1960—70

(Live weight)

Year	Canada	U.S.A.	USSR	Federal Rep. of Germany	Poland	Other	Total
				Million pounds			
1960	243	154	—	—	—	—	397
1961	187	57	150	—	—	—	395
1962	247	159	353	—	—	—	759
1963	254	154	221	—	—	—	628
1964	311	62	293	—	—	—	666
1965	404	77	93	—	2	4	580
1966	564	75	269	—	33	9	950
1967	761	73	280	62	84	53	1,312
1968	1,164	93	322	179	168	172	2,097
1/1969	1,063	70	450	212	110	31	1,936
1/1970	1,003	68	287	192	132	N.A.	1,682

1/ Provisional.

Source: International Commission for the Northwest Atlantic Fisheries

Table 19.— U.S. herring and juvenile herring landings, 1960—70

(Live weight)

Year	All herring	Juvenile	Percent juvenile
	— — Million pounds — —		Percent
1960	154	152	99
1961	57	53	96
1962	159	157	99
1963	154	152	99
1964	64	62	97
1965	77	71	92
1966	75	57	76
1967	73	64	88
1968	93	71	76
1/ 1969	70	53	76
1/ 1970	68	33	49

1/ Preliminary.
Source: International Commission for the Northwest Atlantic Fisheries

... About 74 million pounds were used to produce 13 million pounds of fish meal.

... About 22 million pounds were used to produce 18 million pounds of salted and pickled herring.

... About 0.4 million pounds were used to produce 0.3 million pounds of smoked herring.

... About 46 million pounds were used to produce butterfly fillets, specialty products, animal food, and some additional fish meal.

The apparent overfishing of Northwest Atlantic sea herring may result in an international quota system in the future aimed at reducing landings. If the quota results in smaller catches, the use of sea herring probably would shift away from industrial uses to more food products.

In 1968, the peak year for herring landings, Canada used about 70 percent of her herring for fish meal production. A small switch from fish meal to food products could greatly increase the world supply of herring products for human consumption.

THE DOMESTIC INDUSTRY

Currently, three primary areas of concern face the Maine sardine industry. They are the resource base, competition from imports, and rising costs.

In the past few years, Maine sardine processors have had increasing difficulty in obtaining consistent supplies of juvenile sea herring. They have had to rely, to a greater extent, on imports. Although the smaller herring are preferred, the processors have been able to utilize some large herring for 15-ounce oval packs that are taking up the slack left by lower imports from South Africa and for production under military contracts.

All imported sardines compete with the domestic product, but the strongest competition comes from the Canadian pack which is most similar to the American pack. Since 1967, Canadian sardines have been exported to the United States in quantity. Because of lower production costs, Canadian sardines consistently undersell the domestic pack.

Costs of processing domestic sardines are increasing for a variety of reasons. Because the pack has trended downward, the overhead is spread over fewer units of output, thereby increasing unit costs. Prices of cans have also recently increased. A further cost increase for cans may be forthcoming as a result of the new labor contract in the steel industry. Maine has passed a law that will raise the minimum wage in that State from $1.60 to $1.80 per hour in mid-October. This apparently will apply to the cannery labor force. These increased costs could place a further strain on the competitive position of domestic, vis-a-vis imported (especially Canadian) sardines.

CONSUMPTION PATTERNS OF SARDINES

In 1969—70, the Bureau of Commercial Fisheries (now the National Marine Fisheries Service) sponsored a year-long consumer survey of household fish purchases. Several highlights of sardine consumption are discussed below:

Race

The most outstanding characteristic of sardine consumption is the difference in per capita consumption by blacks and whites.

Per Capita Consumption of Sardines by Race

Black	0.941	[illegible]
White	.223	.173

On the average, blacks consume over four times the quantity of domestic sardines and about twice as much imported sardines per person as do whites. Whites, however, spent considerably more per pound than blacks for both domestic and imported sardines.

Region

Sardine consumption is not uniform throughout the United States. There is a distinct regional pattern with the East South Central and South Atlantic regions of the United States having the greatest per capita consumption.

[illegible] Consumption of Sardines by Region

Region	Domestic	Imported
	pounds	
[illegible]	.148	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	448	226
[illegible]	417	225
[illegible]	369	172
[illegible]	363	229
[illegible]	295	192
All regions	181	.151

Income

Income does not seem to be [illegible] determinant of sardine consumption [illegible]

Per Capita Consumption of Sardines by Capita Income Levels

Per capita income	Domestic	[illegible]
	pounds	
Less than $1,000	0.388	[illegible]
$1,000 - $1,999	.239	[illegible]
$2,000 -- $2,499	.127	[illegible]
$2,500 -- $2,999	.348	[illegible]
$3,000 -- $3,499	[illegible]	[illegible]
$3,500 and over	[illegible]	[illegible]

This pattern of [illegible] refute the notion that [illegible]

TUNA

Review

Issues

Table 20.— Tuna landings in the United States and Puerto Rico, January-June, 1970—71

(Round weight)

Year	Albacore	Bluefin	Skipjack	Yellowfin	1/ Total
		Thousand pounds			
1970					
January	—	30	816	9,168	10,014
February	—	—	4,854	42,454	47,308
March	—	—	3,694	56,438	60,132
1st quarter	—	30	9,364	108,060	117,454
April	—	—	6,230	30,872	37,102
May	—	62	9,392	42,226	51,680
June	—	432	9,338	21,950	31,720
2d quarter	—	494	24,960	95,048	120,502
2/ 1971					
January	—	—	264	4,060	4,324
February	4	—	29,404	30,572	59,980
March	—	4	17,264	23,124	40,392
1st quarter	4	4	46,932	57,756	104,696
April	—	—	22,348	31,406	53,754
May	—	650	23,194	22,870	46,714
June	—	3,826	31,190	16,532	51,548
2d quarter	—	4,476	76,732	70,808	152,016

1/ Does not include Bonito.
2/ Preliminary.
Source: San Pedro Market News reports.

Table 21.— Domestic-caught tuna landings (unloadings), by species at California canneries, January 1 — July 10, 1966—71 1/

Year	Albacore	Bluefin	Skipjack	Yellowfin	Bonito	Total
			Short tons			
1966	50	4,622	13,256	40,587	459	59,064
1967	—	2,447	20,914	58,223	1,372	82,956
1968	12	49	12,370	60,335	2,438	75,204
1969	2	1,405	11,370	80,980	2,651	96,408
1970	—	1,095	16,287	82,777	657	100,816
2/1971	79	2,808	38,352	51,192	2,107	94,538
Percent change from 1970	—	+156	+135	— 38	+221	— 6
1966—70 average:	12	1,923	14,839	64,580	1,533	82,889
Percent change from 5-year average:	+558	+ 46	+158	— 21	+ 37	+ 14

1/ Gross unloading weights (including truck receipts).
2/ Preliminary.

Table 22.— Ratio of yellowfin to skipjack tuna landings on the West Coast, 1965—71

(Round weight)

Year	Yellowfin	Skipjack	Ratio Yellowfin/Skipjack
	Thousand pounds		
1965			
1st half	93,937	32,531	2.89
Total	156,302	84,239	1.86
1966			
1st half	74,334	22,930	3.24
Total	131,982	51,105	2.58
1967			
1st half	112,084	35,886	3.12
Total	140,710	110,996	1.27
1968			
1st half	112,364	21,284	5.28
Total	152,948	59,198	2.58
1969			
1st half	160,514	14,054	11.42
Total	199,170	39,176	5.08
1970			
1st half	164,094	29,722	5.52
Total	231,264	76,098	3.04
1/ 1971			
1st half	99,808	68,648	1.45
Total			

1/ Preliminary.

most recent 5-year average (tables 21 and 22). Although yellowfin and skipjack are taken by the same gear, yellowfin has traditionally been the preferred species. Yellowfin sells for a higher dock price than skipjack; this margin has been consistently maintained (fig. 3). Yellowfin was the first species to be strongly affected by the intensity of fishing. A quota on yellowfin was also partially responsible for increased landings of other species. The sixth regulated season for yellowfin fishing in eastern tropical Pacific waters opened on January 1 and closed on April 9, 1971. As of May 31, after allowance for incidental catches, 65.7 percent of the 1971 yellowfin quota of 140,000 tons had been landed. With closure of the yellowfin fishery, some effort was diverted toward skipjack.

Skipjack is under no quota regulation, and the species is regarded as generally abundant. The primary reason that landings of skipjack have shown little increase until recent months has been inaccessibility. For the past few years, skipjack has tended to migrate with warm currents along the western coast of South America. A major development during the 1971 tuna season has been the migration of skipjack to waters off the coast of Mexico and Central America—following the warmer current; hence, large increases in landings of skipjack.

Canned Import Market

World supplies of canned tuna are being pressured by increasing demand. This pressure is reflected in a trend toward higher prices on canned imports.

Higher import prices and competition for available supplies have precipitated a shift in U.S. imports from canned albacore to other canned species. U.S. imports of canned albacore in 1971 are a little more than half the levels of last year. Meanwhile, imports of canned tuna "other than albacore" (mostly skipjack this year) have been considerably higher than last year, offsetting the decline in imports of albacore.

The supply of institutional pack-sized tuna in the United States is very limited, and prices are high. According to "Washington Food Report", supply problems in the institutional market have reached the critical stage. Reduced Japanese imports of the institutional packs has forced the United States to seek supplies elsewhere.

Fresh and Frozen Import Market

Total imports of fresh and frozen tuna for January-May 1971, were 143 million pounds, 18 percent higher than last year. The composition of these imports has changed considerably since last year. Large increases of imported fresh and frozen skipjack offset a sharp decline in imports of albacore. Imports of skipjack are nearly double a year ago. Imports of fresh and frozen albacore dropped from 58 million pounds in January-May 1970, to 42 million pounds by the end of May this year. Through May 1970, albacore accounted for 48 percent of total fresh and frozen tuna imports; through May 1971, this percentage dropped to 30. The decline is largely the result of lower receipts from Japan. United States imports of fresh and frozen albacore from Japan through May 1971 were 41 percent lower than last year.

The Japanese report a successful summer season in their albacore fishery. Early reports indicate that prospects are good for increased landings of albacore in other areas of the Pacific as the season progresses. Therefore, lower United States imports of albacore from Japan are not the result of any actual or anticipated shortage of this species in Japan. Rather, it is believed that the development of a strong domestic market for tuna in Japan has had a strong bearing on the reduction in exports of albacore to the United States. Increased domestic demand has apparently led the Japanese to hold for domestic consumption much of their fresh and frozen as well as canned albacore.

Total Production Up

Total U.S. production of canned tuna through June 1971 was 11.1 million standard cases—6 percent higher than the same period last year. The Pacific Coast pack of 6.0 million standard cases through June was about the same as last year. A 14-percent increase in production from American Samoa, Hawaii, and Puerto Rico was responsible for the increase in total production (table 23).

Table 23.— United States tuna pack, by region, 1970–71

Year	California	Washington and Oregon	American Samoa, Hawaii & Puerto Rico	Total
	Thousand standard cases			
1970				
January	379	34	660	1,073
February	1,302	43	568	1,913
March	1,179	152	977	2,308
1st quarter	2,860	229	2,205	5,294
April	901	149	657	1,707
May	1,018	67	847	1,932
June	675	65	819	1,559
2d quarter	2,594	281	2,323	5,198
July	833	308	844	1,985
August	1,159	209	882	2,250
September	723	306	982	2,011
3d quarter	2,715	823	2,708	6,246
October	1,172	112	997	2,281
November	707	70	468	1,245
December	621	31	782	1,434
4th quarter	2,500	213	2,247	4,960
Year	10,590	1,589	9,907	22,086
1/ 1971				
January	298	36	439	773
February	834	63	1,128	2,025
March	1,057	70	689	1,816
1st quarter	2,189	169	2,256	4,614
April	1,213	122	891	2,226
May	800	124	1,117	2,041
June	1,292	81	877	2,250
2d quarter	3,305	327	2,885	6,517

1/ Preliminary.
Note: May not add to total because of rounding.

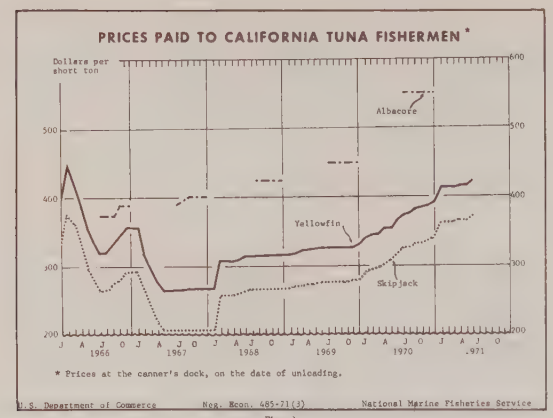

Fig. 3

Demand

All Prices Increase

Through June 1971, tuna prices at all marketing levels were up sharply over last year. The average dock price for bluefin, skipjack and yellowfin increased 17, 21 and 18 percent respectively over January-June 1970 (table 24). The early catch of albacore sold for $630 per ton—this represents a negotiated increase of $80 per ton over last year.

Table 24.— Exvessel prices for tuna in California, monthly, 1964—71 1/

Species/Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
							Dollars per ton						
Albacore													
1964	—	—	—	—	—	—	325	312	312	312	312	312	314
1965	—	—	—	—	—	—	325	325	325	325	325	325	325
1966	—	—	—	—	—	—	375	375	375	390	390	390	382
1967	—	—	—	—	—	—	390	395	400	400	400	400	398
1968	—	—	—	—	—	—	425	425	425	425	425	425	425
1969	—	—	—	—	—	—	450	450	450	450	450	450	450
1970	—	—	—	—	—	—	550	550	550	550	550	550	550
1971	—	—	—	—	—	—							
Bluefin													
1964	—	—	—	—	250	250	245	240	240	240	240	240	243
1965	—	—	—	—	—	267	267	260	255	255	271	208	255
1966	—	—	—	—	—	295	262	290	290	306	—	—	289
1967	—	280	270	—	—	235	235	235	237	237	237	237	245
1968	237	—	—	—	—	—	295	295	291	295	295	295	286
1969	301	—	—	305	305	306	276	306	306	306	306	—	302
1970	326	—	—	—	347	349	351	358	360	362	373	—	353
1971	—	—	392	—	400	401							
Skipjack 2/													
1964	209	211	210	208	209	203	203	203	200	200	200	200	205
1965	200	200	200	205	223	227	226	215	205	205	230	276	218
1966	339	374	364	335	298	280	263	266	276	280	294	293	305
1967	293	265	240	217	205	205	205	205	205	205	205	205	221
1968	205	257	257	258	260	263	264	265	266	266	266	266	258
1969	268	270	271	273	274	276	276	276	276	276	279	279	274
1970	291	296	298	301	308	317	323	327	331	333	338	339	317
1971	362	362	362	366	367	371							
Yellowfin 2/													
1964	255	257	260	259	259	258	258	258	258	258	258	258	258
1965	270	270	270	275	283	287	287	280	275	275	291	326	282
1966	395	447	419	388	353	335	320	321	332	343	358	358	364
1967	358	319	295	277	265	265	265	265	267	267	267	267	281
1968	267	307	308	308	310	314	314	315	316	316	316	316	309
1969	318	319	322	323	325	326	326	326	326	326	329	330	325
1970	341	346	348	355	358	366	372	379	381	383	386	391	367
1971	412	412	412	415	417	421							

1/ Simple average of midpoint of weekly price ranges—prices at the date of unloading.
2/ Premium grade.

Table 25.— Canned tuna wholesale and retail prices, monthly, 1965—71

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
						Dollars per case 1/							
Wholesale 2/ — Advertised brands													
White solid (No. 1/2 — 7 oz. 48's)													
1965	15.13	15.13	15.13	15.13	15.13	15.13	15.13	15.13	15.13	15.13	15.13	15.13	15.13
1966	16.00	16.00	17.75	17.75	16.63	16.63	16.63	16.63	16.62	16.67	16.68	16.88	16.74
1967	16.88	16.88	16.88	16.49	16.10	16.10	16.10	16.10	16.10	16.10	16.35	16.35	16.37
1968	16.35	16.34	16.35	16.35	16.60	16.85	16.85	16.85	16.85	16.85	16.85	17.65	16.72
1969	17.85	17.85	17.85	18.05	18.10	18.10	18.41	18.60	18.70	19.10	19.23	19.35	18.43
1970	19.35	19.35	19.55	19.85	19.85	19.95	20.35	20.51	22.35	22.35	22.35	22.35	20.68
1971	22.35	22.35	22.55	22.85	22.85	22.85							
Light chunk (No. 1/2 — 6 1/2 oz. 48's) 2/													
1965	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
1966	14.25	14.25	15.85	15.85	14.63	14.63	14.40	14.15	14.15	14.15	14.15	14.15	14.55
1967	14.51	14.15	14.15	13.83	13.50	13.50	13.50	13.50	13.50	13.50	13.75	13.56	13.71
1968	13.50	13.50	14.35	14.35	14.35	14.35	14.35	14.35	14.35	14.35	14.35	14.75	14.24
1969	14.85	14.85	14.85	14.85	14.85	14.85	14.91	15.10	15.25	15.85	15.98	16.35	15.19
1970	16.35	16.35	16.49	16.70	16.70	16.80	17.20	17.20	17.20	17.70	17.70	17.70	17.01
1971	18.20	18.70	18.70	18.65	18.70	18.70							
Wholesale 2/ — Private label													
White solid (No. 1/2 — 7 oz. 48's)													
1965	12.88	12.63	12.75	12.75	12.75	12.75	12.75	12.75	12.50	12.25	12.25	12.25	12.61
1966	12.63	12.63	14.38	14.38	14.38	14.38	14.38	14.38	14.37	14.37	14.37	13.75	14.12
1967	13.75	13.70	13.70	13.50	13.25	13.25	13.25	13.25	13.25	13.25	13.25	13.25	13.39
1968	13.25	13.25	13.85	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.25	14.05
1969	14.25	14.25	14.25	14.25	14.25	14.25	14.50	15.25	15.35	15.75	15.75	16.75	14.90
1970	16.75	16.75	16.85	17.00	17.00	17.25	18.25	18.50	19.25	20.25	20.25	20.25	18.20
1971	20.25	20.25	20.25	20.25	20.25	20.25							
Light chunk (No. 1/2 — 6 1/2 oz. 48's) 2/													
1965	9.63	9.63	9.50	9.38	9.50	9.63	9.63	9.63	9.63	9.63	9.63	9.63	9.59
1966	10.75	10.25	13.85	13.85	12.75	12.75	12.00	11.75	11.75	11.75	11.94	12.00	12.12
1967	12.00	11.99	11.95	11.65	11.35	11.35	11.35	11.35	11.35	11.35	10.75	10.75	11.43
1968	10.75	10.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.58
1969	11.75	11.75	11.75	11.75	11.75	11.75	11.79	11.88	11.99	12.50	12.50	12.88	12.00
1970	12.88	12.88	12.93	13.00	13.00	13.20	14.00	14.13	14.50	15.00	15.00	15.00	13.79
1971	15.06	15.50	15.50	15.50	15.50	15.50							
Imported 2/ (brine pack)													
White solid (No. 1/2 — 7 oz. 48's)													
1965	12.88	12.63	12.75	12.75	12.75	12.75	12.75	12.75	12.50	12.25	12.25	12.25	12.61
1966	12.63	13.63	14.38	14.38	14.38	14.38	14.38	14.38	14.38	14.38	14.38	14.38	14.17
1967	14.38	14.38	14.38	14.38	13.64	12.90	12.90	12.90	12.90	13.40	14.16	14.16	13.71
1968	14.12	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	14.56	14.01
1969	14.41	14.41	14.41	14.47	14.51	14.51	14.63	15.00	15.26	15.69	15.72	15.81	14.90
1970	15.81	15.81	16.15	16.18	16.40	17.03	17.82	17.82	18.14	18.52	18.69	19.22	17.30
1971	19.22	19.22	19.22	19.22	19.22	19.22							
Light solid (No. 1/2 — 7 oz. 48's) 2/													
1965	10.00	10.00	10.00	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.25	10.19
1966	10.75	10.75	14.00	14.00	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12	13.54
1967	14.12	14.12	14.12	14.12	12.26	10.40	10.40	10.40	10.40	10.71	11.18	11.18	11.95
1968	11.15	11.02	11.02	11.02	11.02	11.02	11.02	11.02	11.02	11.02	11.02	11.39	11.06
1969	11.27	11.27	11.27	11.32	11.37	11.37	11.40	11.50	11.78	12.19	12.27	12.51	11.63
1970	12.51	12.51	13.11	13.26	13.73	13.79	14.02	14.02	14.22	14.37	14.58	14.79	13.79
1971	14.79	14.79	14.79	14.79	14.79	14.79							

Table 25.— Canned tuna wholesale and retail prices, monthly, 1965 71 (continued)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
						Cents per can							
Retail 3/													
Light chunk (6 1/2 oz. cans)													
1965	32.4	32.2	32.0	31.8	31.8	31.9	31.9	32.2	32.2	32.1	31.8	31.9	32.0
1966	32.2	32.9	34.2	34.9	36.2	36.3	36.4	36.4	36.3	35.7	35.8	36.1	35.3
1967	35.9	35.5	35.5	35.3	35.2	35.1	34.6	34.3	34.2	34.4	34.4	34.4	34.9
1968	34.3	34.2	33.7	33.8	34.5	34.7	34.6	34.9	34.9	34.9	34.8	35.0	34.5
1969	35.1	35.4	35.1	35.3	35.6	35.5	35.4	35.7	35.8	36.3	36.5	36.9	35.7
1970	37.6	39.8	38.3	38.7	39.2	39.4	39.4	35.7	40.7	41.7	42.2	42.7	39.4
1971	43.3	43.6	43.9	44.3	44.2								

1/ Quotes do not include trade or promotional allowances.
2/ Wholesale prices reported at Los Angeles by San Diego brokers and cannery representatives, f.o.b. canner's terminal.
3/ U.S. average retail price reported by the Bureau of Labor Statistics (44 cities).

At the wholesale level, all prices registered considerable increases. Private label white solid pack led the way, up 20 percent through June 1971 over January-June 1970. Prices for packs of light solid and light chunk increased the least, both 12 percent higher than the first half of 1970. Prices for imported 7-ounce white solid pack (albacore) follow the general price trend. The price for this pack has remained firm at $19.22 per case through the first half of 1971—18 percent above the average price for the same period last year (table 25).

At the retail level, the average price of light chunk tuna for January-May 1971 was 43.9 cents per can, 5.2 cents per can higher than the average for the same period last year.

Outlook

Prospects for good albacore and skipjack seasons indicate that industry supply problems may be eased during the remainder of the year. Overall, the U.S. pack will likely be slightly larger than last year. All prices increased markedly early in the year. The rate of price increase may moderate later this year as supplies become more abundant.

In the latter months of 1970, considerable publicity was generated concerning mercury in tuna. After extensive testing, Food and Drug Administration officials found that less than 5 percent of fresh and frozen raw supplies contain mercury in excess of the maximum .5 ppm guideline.

Industry and Government are taking precautions to insure the wholesomeness of the product. We have no evidence that sales of tuna have been adversely affected on a permanent basis.

Although few of the larger fish exceed the maximum standards of mercury content, the domestic industry has shifted efforts toward the processing of smaller species of tuna. It has been found that skipjack is least affected by contaminants.

CONSUMPTION PATTERNS OF CANNED TUNA

Based on the consumer survey mentioned earlier, several observations can be made with regard to consumption patterns of canned tuna:

Household Size

Light meat tuna is consumed in the greatest quantity by members of all size households. As household size increases, per capita consumption of all forms of canned tuna tends to decrease.

Per Capita Consumption of Canned Tuna by Household Size

Household Size	White meat	Light meat	Other
	— — Pounds — —		
1	1.701	3.432	0.422
2 — 3 persons	1.050	1.827	.235
4 — 5 persons	.771	1.705	.216
Over 5 persons	.722	1.322	.185

Region

On a per capita basis, the New England Region consumes a much greater quantity of white pack tuna than any other area in the country. Per capita consumption of light pack tuna is highest in the Pacific Region and lowest in New England.

Per Capita Consumption of Canned Tuna by Region

Region	White meat	Light meat	Other
	— — Pounds — —		
New England	2.388	1.135	0.277
Middle Atlantic	1.582	1.504	.215
E. North Central	.529	1.540	.138
W. North Central	.252	1.699	.177
South Atlantic	.722	1.708	.129
E. South Central	.563	1.466	.518
W. South Central	.489	2.070	.428
Mountain	.822	2.478	.406
Pacific	.058	2.582	.149

Income

White meat tuna (higher priced) is consumed in greater quantity by the highest income group in the survey. Income does not seem to be a controlling factor in the consumption of light meat tuna. Consumption of the lowest priced form of canned tuna (other than white or light meat) is consumed in the greatest quantity by lower income individuals.

Per Capita Consumption of Canned Tuna By Income

Income per capita	White meat	Light meat	Other
	— — Pounds — —		
Under $1,000	0.580	1.602	0.255
$1,000 — $1,999	.790	1.813	.283
$2,000 — $2,499	.800	1.480	.154
$2,500 — $2,999	.877	1.782	.216
$3,000 — $3,499	.998	2.081	.256
$3,500 and over	1.096	1.557	.154

Education

On the average, those households whose head has less than a high school education tend to consume greater quantities of lower priced light meat tuna.

Per Capita Consumption of Canned Tuna by Education

Education	White meat	Light meat	Other
	— — Pounds — —		
Less than 4 years of high school	1.027	2.062	0.333
Less than 4 years of college	.927	1.856	.198
College graduate	.894	1.492	.191

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